

ATTORNEY DOCKET NO. 11594STCIP (NORT10-00098)

U.S. SERIAL NO. 09/672,814

PATENT

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows, substituting any amended claim(s) for the corresponding pending claim(s):

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C2
1. (Currently Amended) A speech recognition system comprising computer memory storing:
a first set of speaker-independent word models used to match a word in an utterance of a user
with a word model in said first set, wherein said first set of word models includes models for each
of a plurality of words;
a second set of speaker dependent word models derived from speech of a particular user and
used to match a word in an utterance of said particular user, wherein said second set of word models
includes models for at least some of said plurality of words; and
a program portion used to identify words in utterances of said particular user by attempting
to match portions of an audio signal with:
word models among said first set; and
word models among said second set,
wherein said identified words in the utterances of said particular user include user-selected
words for invoking commands.
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1 2. (Currently Amended) A method of operating a speech recognition system [recognition
2 system] comprising:

3 storing a first set of speaker-independent word models used to match a word in an utterance
4 of any user with a word model in said first set, said first set of word models including models for
5 each of a plurality of words;

6 storing a second set of speaker dependent word models derived from speech of a particular
7 user, said second set of word models including models for at least some of said plurality of words

8 and at least one model of said second set chosen by said particular user to initiate performance of at
9 least one of a plurality of system commands; [and]

10 recognizing words in utterances of said particular user by attempting to match portions of an
11 audio signal with:

12 word models among said first set; and

13 word models among said second set; and

14 performing at least one system command in response to a recognized word within said
15 utterances of said particular user.

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1 3. (Currently Amended) A method of operating a speech recognition system [recognition
2 system] comprising:

3 storing a first set of speaker-independent word models used to match a word in an utterance
4 of any user with a word model in said first set;

5 storing a second set of speaker dependent word models derived from speech of a particular
6 user by:

7  inviting said particular user upon first use of said speech recognition system to speak
8 training words for deriving said second set;

9 deriving said second set from said training words; and

10 storing said second set;

11 associating at least one stored word model with a command token also associated with a
12 default command word model; and

13 recognizing words in utterances of said particular user by attempting to match portions of an
14 audio signal with:

15 word models among said first set; and

16 word models among said second set.

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1 4. (Original) The method according to claim 2 further comprising:
2 inviting said particular user to speak training utterances of a word upon a predetermined
3 number of failures to recognize said word using said first set of word models;
4 deriving a word model from said training utterances; and
5 storing said word model from said training utterances, in said second set.

B3 5. (Currently Amended) A method of operating a speech recognition system [recognition
2 system] comprising:

3 storing a first set of speaker-independent word models used to match a word in an utterance
4 of any user with a word model in said first set;

5 storing a second set of speaker dependent word models derived from speech of a particular
6 user by:

7 determining a likelihood of recognizing a spoken word using said first set;

8 deriving a word model from a spoken word marginally recognized using said first set;

9 storing said word model in said second set; and

10 recognizing words in utterances of said particular user by attempting to match portions of an
11 audio signal with:

12 word models among said first set; and

13 word models among said second set.

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1 6. (Currently Amended) A method of enhancing speech recognition comprising:

2 providing a set of user-independent word models derived from utterances of a plurality of
3 speakers, said [first] set of user-independent word models including models for each of a plurality
4 of words;

5 providing a set of user-dependent word models for ones of a plurality of users each derived
63 from utterances of one of said users, said [second] set of user-dependent word models including
7 models for at least some of said plurality of words;

8 matching an utterance from one of said users to one of said user-independent word models;

9 [and]

10 matching [another] an other utterance from said one of said users to one of said user-
11 dependent word models; and

12 responsive to matching either said utterance to said one of said user-independent word
13 models or said other utterance to said one of said user-dependent word models, initiating a command
14 associated with both said one of said user-independent word models and said one of said user-
15 dependent word models.

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1 7. (Currently Amended) A method of enhancing speech recognition comprising:

2 providing a set of user-independent word models derived from utterances of a plurality of
3 speakers, at least one user-independent word model representing a first word and associated with a
4 command token;

5 providing a set of user-dependent word models for ones of a plurality of users each derived
6 from utterances of one of said users, at least one user-dependent word model representing a second
7 word different than the first word and associated with said command token, said user-dependent
8 word models each derived by:

9 *B3* inviting a new user to speak training words for deriving a set of user-dependent word
10 models;

11 deriving said set of user-dependent models from said training words; [and]

12 storing said set of user-dependent word models; and

13 associating a user-dependent word model with a command token designated by said
14 one of said users;

15 matching an utterance from one of said users to one of said user-independent word models;

16 and

17 matching an other utterance from said one of said users to one of said user-dependent word
18 models.

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1 8. (Previously Amended) The method according to claim 7 further comprising:
2 inviting said new user to speak training utterances of a word upon a predetermined number
3 of failures to identify said word among said user-independent word models when no model for said
4 word is present in said user-dependent models;
5 deriving a word model from said training utterances; and
6 storing the derived word model in said set of user-dependent word models.

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1 9. (Original) The method according to claim 8 wherein said user-dependent word models are
2 stored in a separate memory location from said user-independent word models.

1 10. (Previously Amended) A method of operating a speech recognition system, comprising:
2 storing a first set of recognition models for recognizing speech independent of an identity
3 of a user, said first set of recognition models for recognizing a plurality of system commands;
4 storing a second set of recognition models for recognizing speech of a particular user, at least
5 one model of said second set for initiating performance of at least one of said plurality of system
6 commands, so that at least one of said system commands may be performed in response to a
7 recognized user chosen utterance.

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1 11. (Original) The method of claim 10, wherein a single utterance corresponding to one of said
2 second set of models may correspond to a plurality of sequentially performed system commands.

1 12. (Original) The method of claim 10, further comprising:
2 comparing each model of said second set of recognition models to each of said first set of
3 recognition models and other ones of said second set, to ensure that speech recognized using each
4 model in said second set will not be mistakenly recognized using any model in said first set, or other
5 models in said second set, prior to storing said each model.

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1 13. (Previously Amended) A voice messaging system, comprising a speech recognition system
2 for controlling operation of said voice messaging system, said speech recognition system comprising:
3 a memory storing:
4 a first set of word models for recognizing speech independent of an identity of a user,
5 said first set of word models for recognizing a plurality of system commands controlling
6 operation of said voice messaging system; and
7 a second set of models for recognizing speech of a particular user, at least one model
8 of said second set for initiating performance of at least one of said plurality of system
9 commands, so that at least one of said system commands may be performed in response to
10 a recognized user chosen word.

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1 14. (Previously Amended) The voice messaging system of claim 13, wherein said memory
2 further contains computer executable instructions adapting said system to record utterances by said
3 particular user to form said second set, and to collect indicators of system commands to be associated
4 with each model in said second set.

1 15. (Original) The voice messaging system of claim 14, wherein said memory further stores
2 computer executable instructions adapting said system to prompt a user to record utterances in place
3 of system commands.

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1 16. (Original) The voice messaging system of claim 14, wherein said memory further contains
2 computer executable instructions adapting said system to ensure that speech recognized with each
3 model in said second set will not likely be recognized with any model in said first set or other models
4 in said second set, prior to storing said each model in said second set.

1 17. (Original) The voice messaging system of claim 16, wherein at least one model in said
2 second set initiates performance of more than one or said plurality of system commands.

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1 18. (Previously Amended) A computer readable medium, storing;
2 a first set of recognition models for recognizing speech independent of an identity of a user
3 at a speech recognition system, at least some of said models in said first set for recognizing a
4 plurality of system commands; and
5 computer executable instructions, that when executed at said speech recognition system,
6 adapt said speech recognition system to form and store a second set of models, for recognizing
7 speech of a particular user, with at least one model of said second set for initiating performance of
8 at least one of said plurality of system commands, so that at least one of said system commands may
9 be performed in response to a recognized word chosen by said particular user.

1 19. (Original) The computer readable medium of claim 18, further storing computer executable
2 instructions adapting said system to record utterances by said particular user to form said second set
3 of models, and to associate at least one system command with each model in said second set of
4 models.

1 20. (Original) The computer readable medium of claim 19, further storing computer executable
2 instructions adapting said system to prompt a user to record utterances in place of system commands.

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1 21. (Currently Amended) The computer readable medium of claim 18, further storing computer
2 executable instructions adapting said system to ensure that speech recognized using each model of
3 said second [st]set will not be mistakenly recognized with any one model in said first set of
4 recognition models, or other models in said second set of models, prior to storing said each of said
5 models in said second set.